State Of California The Resources Agency of California

Memorandum

Date: June 11, 2003
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To : John L. Geesman Commissioner and Presiding Member
Arthur H. Rosenfeld, Commissioner and Associate Member

From : California Energy Commission - **Matt Trask**
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Subject : **CORRECTIONS TO AIR QUALITY CONDITIONS OF CERTIFICATION FOR THE PICO POWER PROJECT STAFF ASSESSMENT**

Phase 2 of the Staff Assessment (SA) for the Pico Power Project (02-AFC-3) was released on May 30 and included analysis of Air Quality and Alternatives; all other technical areas were covered in Phase 1 of the SA, which was released on March 26, 2003 and updated in an Addendum released on April 30, 2003. Attached please find the corrections to various air quality-related Conditions of Certification and Air Quality Table 18, originally published in Phase 2 of the SA. This document contains minor revisions to certain conditions, based on discussions with the applicant at a Staff Assessment workshop held on June 5, 2003. The changes are minor in nature and would have no effect on the environment or on public safety.

Staff anticipates that it will issue an Addendum to Phase 2 of the Staff Assessment after the Bay Area Air Quality Management District releases its Final Determination of Compliance for the Pico project.

cc: Gary Fay
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CORRECTIONS TO AIR QUALITY CONDITIONS OF CERTIFICATION FOR THE PICO POWER PROJECT STAFF ASSESSMENT

Below are the changes to the Air Quality section of Phase 2 of the Staff Assessment for the Pico Power Project (PPP) Application for Certification (AFC), as agreed to by the Applicant and Commission staff. The changes or additions occurred based on: comments from the Applicant; new information gathered since the SA publication date; and errors in data used in the SA. New text is underlined, while deleted text is shown in "strike-through," so that readers can quickly assess the changes in any given section.

AIR QUALITY

Supplemental Testimony of Gabriel Taylor and Keith Golden

1. Correcting a decimal place error, **AIR QUALITY Table 18** is revised to read as follows:

AIR QUALITY Table 18
Emission Reduction Credits

ERC Number	Source Location (City)	Date Banked	Source Type	NOx (tpy)	POC (tpy)
861	Martinez	5/22/1987	Refinery Modification	51.5	-
860	South San Francisco	12/6/1994	Paint Manufacturer Shutdown	-	5.0
865	Oakland	5/30/2002	Dematuring Tank Modification	-	6.5
			Total ERCs Owned	51.5	11.5
			Pico Power Project Emissions Limits	43.0	~~111.9~~ 11.2

2. Based on workshop discussions with the applicant and the Bay Area Air Quality Management District, **Conditions of Certification AQ-C1 through AQ-C7** are revised to read:

AQ-C1 The project owner shall designate and retain ~~fund all expenses for~~ an on-site air quality construction mitigation manager (AQCMM) who shall be responsible for maintaining compliance with condition~~s~~ **AQ-C2** ~~through **AQ-C4**~~ for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities identified in Conditions AQ-C1 ~~AQ-SC1~~ through AQ-C3 ~~AQ-SC4~~ to one or more air quality construction mitigation monitors. The on-site AQCMM shall have full access to areas of construction of the project site and linear facilities, and shall have the authority to appeal to the CPM to have the CPM stop any or all construction activities as warranted by applicable construction mitigation conditions. ~~The on-site AQCMM, and any air quality construction mitigation monitors responsible for compliance with the requirements of AQ-SC4, shall have a current certification by the California Air Resources Board for Visible Emission Evaluation prior to the commencement of ground disturbance.~~ The AQCMM may have other responsibilities in addition to those described in this condition. The on-site AQCMM shall not be terminated without written consent from the CPM.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM, for approval, the name, ~~current ARB Visible Emission Evaluation certificate,~~ and contact information for the on-site AQCMM and air quality construction mitigation monitors.

AQ-C2 The project owner shall provide a construction mitigation plan, for approval, which shows the steps that will be taken, and reporting requirements, to ensure compliance with conditions~~ and **AQ-C4**~~ **AQ-C3**.

Verification: At least 30 ~~60~~ days prior to start any ground disturbance, the project owner shall submit to the CPM, for approval, the construction mitigation plan. The CPM will notify the project owner of any necessary modifications to the plan within 15 ~~30~~ days from the date of receipt. Otherwise, the plan shall be deemed approved.

AQ-C3 The on-site AQCMM shall submit to the CPM, in the monthly compliance report, a construction mitigation report that demonstrates compliance with the following mitigation measures for the purposes of preventing fugitive dust plumes from leaving the project site:

a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered every four hour of construction activities, or as necessary to prevent fugitive dust plumes from leaving the project site. ~~until sufficiently wet to comply with the dust mitigation objectives of Condition AQ-SC4.~~ The frequency of watering can be reduced or eliminated during periods of precipitation.

b) No vehicle shall exceed 10 miles per hour within the construction site.

c) The construction site entrances shall be posted with visible speed limit signs.

d) All vehicle tires shall be inspected and washed as necessary to be ~~or~~ cleaned free of dirt prior to entering paved roadways.

e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

f) All unpaved entrances to the construction site shall be graveled or treated with dust soil stabilization compounds.

g) All ~~No~~ construction vehicles shall ~~can~~ enter the construction site ~~unless~~ through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.

h) Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan, to prevent run-off to roadways.

i) All paved roads within the construction site shall be swept as necessary to prevent the accumulation of dirt and debris ~~twice daily~~.

j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept twice daily or as necessary to prevent the accumulation of dirt and debris.

k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or be treated with appropriate dust suppressant compounds.

l) All vehicles that are used to transport solid bulk material and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.

m) Wind erosion control techniques, such as wind breaks, water, chemical dust suppressants and vegetation, shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

~~n) Any construction activities that cause fugitive dust in excess of the visible emission limits specified in Condition **AQ-C4** shall cease when the wind exceeds 15 miles per hour.~~

n) All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.

o) All large construction diesel engines, which have a rating of 50 hp or more, shall meet, at a minimum, the Tier 1 ARB/U.S. EPA certified standards for off-road equipment.

p) All large construction diesel engines, which have a rating of 50 hp or more that do not have an U.S. EPA Tier 1 particulate standard (50 to 175 hp engines) and do not meet Tier 2 particulate standards, shall be equipped with catalyzed diesel particulate filters (soot filters), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types.

q) All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM that shows the engine meets the conditions **AQ-C3(op)** and **AQ-C3(pq)** above.

Observations of visible dust plumes would indicate that the existing mitigation measures are not resulting in effective mitigation. The AQCMM shall implement the following procedures for additional mitigation measures if the AQCMM determines that the existing mitigation measures are not resulting in effective mitigation:

a) The AQCMM shall direct more aggressive application of the existing mitigation methods within 15 minutes of making such a determination.

b) The AQCMM shall direct implementation of additional methods of dust suppression if step a) specified above, fails to result in adequate mitigation within 30 minutes of the original determination.

c) The AQCMM shall direct a temporary shutdown of the source of the emissions if step b) specified above fails to result in adequate mitigation within one hour of the original determination. The activity shall not restart until one full hour after the shutdown. The owner/operator may appeal to the CPM any directive from the AQCMM to shutdown a source, provided that the shutdown shall go into effect within one hour of the original determination unless overruled by the CPM before that time.

Verification: In the MCR, the project owner shall provide the CPM a copy of the construction mitigation report and any diesel fuel purchased records, which clearly demonstrates compliance with condition AQ-C3.

~~**AQ-C4** No construction activities are allowed to cause visible dust emissions at or beyond the project site fenced property boundary. No construction activities are allowed to cause visible dust plumes that exceed 20 percent opacity at any location on the construction site. No construction activities are allowed to cause any visible dust plume in excess of 200 feet beyond the centerline of the construction of linear facilities.~~

~~**Verification:** The on-site AQCMM shall conduct a visible emission evaluation at the construction site fence line, or 200 feet from the center of construction activities at the linear facility, each time they see excessive fugitive dust from the construction or linear facility site. The records of the visible emission evaluations shall be maintained at the construction site and shall be provided to the CPM on the monthly construction report.~~

AQ-C4~~5~~ The project owner shall submit to the CPM for review and approval any modification proposed by either the project owner or issuing agency to any project air permit.

Verification: The project owner shall submit any proposed air permit modification to the CPM within five working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.

AQ-C5~~6~~ The project owner shall submit a plan for a fireplace retrofit/wood stove replacement program to the CPM for approval. The plan must be sufficient to secure 16.38 tons per year of PM10 based on the project emissions during the fall and winter quarters of each year. The plan shall provide the following elements:

a) Provisions for a replacement fund to be made available on a first-come, first-serve basis to finance a five-year voluntary wood stove replacement/fireplace retrofit program. The replacement fund shall pay for the retrofit/replacement costs of current non-U.S. EPA certified fireplaces and wood stoves (up to a maximum of $1,250 for each retrofit/replacement) with a U.S. EPA-certified solid fuel heating device. The fund shall be capable of being drawn upon in any year of the five year program and as allowed by conditions of certification until the fund is depleted.

b) A list of approved retailers and professional, licensed installers. Each resident participating in the retrofit/replacement program would only do business with listed retailers or installers. Payments shall only be made to vendors or contractors who agree to participate in the program and who submit certification that the retrofit/replacement is permanent (by permanent removal of the wood stove doors and proper recycling of the old stove) and conforms to program requirements.

c) A schedule for submission to the CPM of quarterly status reports on the program, the status of reimbursements, and remaining funds available. In addition, the fund shall be audited annually.

d) A description of eligibility requirements, including that, for the first three years of the program, homes and businesses located within a 15-mile radius of the proposed facility will be eligible to participate in the program. Homes and businesses within a 25-mile radius of the P~~C~~PP facility would be eligible to participate in the fourth and fifth years if there are remaining funds.

e) A detailed schedule of deliverables.

Verification: No later than 60 ~~30~~ days prior to first fire ~~commencement of construction~~, the project owner shall provide the CPM, for approval, a copy of the wood stove replacement program, and a copy of the agreement document with the BAAQMD that describes the roles and responsibilities of the Project Owner and the BAAQMD in the wood stove replacement program.

AQ-C6~~7~~ The following ERC Certificates, and the amounts specified shall be surrendered per the requirements of Condition AQ-41:

ERC Certificate 861 (51.5 tons NOx),
ERC Certificate 860 (5.0 tons POC),
ERC Certificate 865 (6.5 tons POC).

Verification: At least 60 days prior to construction ~~commencing turbine first fire~~, the project owner/operator must surrender the ERC certificates identified above to the District and provide copies to the CPM.

3. Based on calculations published in the PDOC after publication of the Staff Assessment, correct Condition of Certification AQ-20 as follows:

AQ-20 The owner/operator shall ensure that the Gas Turbines (S-1and S-3) and HRSGs (S-2 and S-4) comply with requirements (a) through (h) under all operating scenarios, including duct burner firing mode and power augmentation mode. Requirements (a) through (h) do not apply during a gas turbine start-up or shutdown. (BACT and Toxic Risk Management Policy)

(a) Nitrogen oxide mass emissions (calculated as NO_2) at P-1 (the combined exhaust point for S-1 Gas Turbine and S-2 HRSG after abatement by A-1 SCR System) shall not exceed 4.49 pounds per hour or ~~0.0074~~ 0.00735 lb/MM BTU (HHV) of natural gas fired. Nitrogen oxide mass emissions (calculated as NO_2) at P-2 (the combined exhaust point for S-3 Gas Turbine and S-4 HRSG after abatement by A-3 SCR System) shall not exceed 4.49 pounds per hour or ~~0.0074~~ 0.00735 lb/MM BTU (HHV) of natural gas fired.

(b) The nitrogen oxide emission concentration at emission points P-1 and P-2 each shall not exceed 2.0 ppmv, on a dry basis, corrected to 15 percent O_2, averaged over any 1-hour period. (BACT for NO_x)

(c) Carbon monoxide mass emissions at P-1 and P-2 each shall not exceed 5.47 pounds per hour or 0.00896 lb/MM BTU of natural gas fired, averaged over any rolling 3-hour period.

(d) The carbon monoxide emission concentration at P-1 and P-2 each shall not exceed 4.0 ppmv, on a dry basis, corrected to 15 percent O_2, averaged over any rolling 3-hour period. (BACT for CO)

(e) Ammonia (NH_3) emission concentrations at P-1and P-2 each shall not exceed 10 ppmv, on a dry basis, corrected to 15 percent O_2, averaged over any rolling 3-hour period. This ammonia emission concentration shall be verified by the continuous recording of the ammonia injection rate to A-1 and A-3 SCR Systems. The correlation between the gas turbine and HRSG heat input rates, A-1 and A-3 SCR System ammonia injection rates, and corresponding ammonia emission concentration at emission points P-1 and P-2 shall be determined in accordance with permit condition **AQ-30**. (TRMP for NH_3)

(f) Precursor organic compound (POC) mass emissions (as CH_4) at P-1 and P-2 each shall not exceed ~~1.6~~ 1.56 pounds per hour or ~~0.00262~~ 0.00255 lb/MM BTU of natural gas fired. (BACT for POC)

(g) Precursor organic compound (POC) mass emissions (as CH_4) at P-1 and P-2 each shall not exceed 2.0 ppmv, on a dry basis, corrected to 15 percent O_2 , averaged over any rolling 3-hour period. (BACT for POC)

(h) Sulfur dioxide (SO_2) mass emissions at P-1 and P-2 each shall not exceed 0.41 pounds per hour or 0.000676 lb/MM BTU of natural gas fired. (BACT for SO_2)

(i) Particulate matter (PM10) mass emissions at P-1and P-2 each shall not exceed 3.0 pounds per hour when the HRSG duct burners are not in operation. Particulate matter (PM10) mass emissions at P-1 and P-2 each shall not exceed 4.3 pounds per hour when HRSG duct burners are in operation. (BACT for PM10)

Compliance with the hourly NO_x emission limitations specified in condition **AQ-25(a)** and **AQ-25(b)**, at both P1 and P2, shall not be required during short-term excursions, limited to a cumulative total of 160 hours per rolling 12 month period. Short-term excursions are defined as 15-minute periods designated by the owner/operator that are the direct result of transient load conditions, not to exceed four consecutive 15-minute periods, when the 15-minute average NO_x concentration exceeds 2.0 ppmv, dry @ 15 percent O_2. Examples of transient load conditions include, but are not limited to the following:

(1) Initiation/shutdown of combustion turbine inlet air cooling
(2) Initiation/shutdown of combustion turbine water mist or steam injection for power augmentation
(3) Rapid combustion turbine load changes
(4) Initiation/shutdown of HRSG duct burners
(5) Provision of Ancillary Services and Automatic Generation Control at the direction of the California Independent System Operator (Cal-ISO)

The maximum 1-hour average NO_x concentration for short-term excursions at P-1 and P-2 each shall not exceed *5* ppmv, dry @ 15 percent O_2 *or 11 lb/hr (2.75 lb per 15 minute period)*. All emissions during short-term excursions shall be included in all calculations of hourly, daily and annual mass emission rates as required by this permit.

Verification: The project owner/operator shall submit documentation of compliance with all emission limits specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of condition **AQ-34**.